Web-Based Learning:
Research and Innovation in Translation Learning Resources

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Abstract
Printed materials have been the major type of learning mode employed by most universities. However, within the context of providing open learning resources for the students, other universities have also shown increasing research and development activities associated with technology-oriented learning resources in the form of Open Educational Resources. This paper reports on research and innovation in the design, development, and evaluation of online translation learning resources. To achieve the objectives, two models of research are adopted − Research and Development model and Web-Based Instructional Design/WBID model. In terms of methodology, the development of the web-based learning resources goes through several major stages: (1) *analysis* stage aiming to study the outcomes, context, learners, instructional content, instructional design, and the use of educational technology; (2) *evaluation planning* stage examining related aspects (i.e. effectiveness, efficiency, appeal, usability); (3) *concurrent design* stage involving the design, development, formative evaluation, and initial implementation; (4) *full implementation* stage. This research adopts mixed methods − qualitative and quantitative methods. As for data collection, a number of techniques are used (i.e. in-depth interviews with content experts, instructional designers and media experts, and surveys (online/written questionnaire), observation involving the users (i.e. students and tutors), assessment instruments, as well as a documentation study of the existing printed translation learning resources. A critical analysis of these issues is followed by a crucial discussion. The paper concludes with an assertive view that a combination of the two (i.e. web-based learning resources and online tutorial packages) would not only create greater access to open learning sources for the students but will also improve higher quality of learning resources.

Keywords:
formative evaluation, online translation learning resources, R & D, WBID model, research and innovation, stakeholders' perception, web-based learning

Background

The rapid development of information and communication technology (ICT) is one of the strategic environmental factors that would give influence to the development of *Universitas Terbuka* (UT Strategic Plan 2010−2021). Along with the shift of paradigms in education in in dealing with the global changes and technological advances, *Universitas Terbuka* (UT) are required to be able to increase access for the students to learning resources that are no longer restricted by space and time.

The quality of educational programs offered by UT is partly linked to the graduate's competence, human resources competitiveness, as well as accountability. In other words, various efforts

made by UT in order to improve the quality of open and distance education (ODL) must be comprehensive, systemic and sustainable. This normally covers many aspects such as academic and non-academic products, teaching-learning process, design, delivery methods of learning materials, as well as the philosophy of open and distance education.

As far as UT's Master Plan for Research on Open and Distance Learning (2013) is concerned, delivery systems and technology are the two parts (among others) that can support the students to achieve their competencies or improve their skills or to widen their knowledge. In that context, digital and online media (i.e. online and Web-based learning) is one of the strategic issues. One of the alternative solutions to this is therefore by developing open learning resources in the form of online and web-based learning materials. It is therefore necessary to focus on a key research topic – the design and development of innovative media of teaching and learning. Thus, the design and development of web-based supplementary materials for core translation courses is very relevant and urgent in this respect.

UT, as requested by the stakeholders, needs to sticks to its full commitment with regard to the Open Educational Resources or OER movement. An evidence of this UT has created UT-OER on its website such as Open Courseware, web-based supplementary learning materials.

Integrating ICT into the distance education system in particular is one of the challenges that create a number of metaphors (Atkins, Brown & Hammond 2007), as follows: (1) *e-learning* (learning activities done with the help of computers and involves simultan interactions among the users through the network); (2) *web-based learning* related to the those learning materials presented via the Web browser, including a package of learning materials delivered in the form of CD-ROM(s) and other kinds of media; (3) *online learning* associated with the learning content that can be accessed through the computer/the Web/the Internet/CD-ROM/computer hard disks; (4) *distance learning* having to do with the remote interactions between tutors and students); (5) *virtual learning* through which students are able to get access to interactive learning materials without having to attend a class at a specific time); (6) *mobile-learning* linked to the use of handled mobile devices and IT for teaching and learning purposes, such as Personal Digital Assistant, mobile phone, laptops and Tablet PC technology in teaching and learning process).

The learning materials, mainly printed ones, for core translation courses at the Undergraduate Program of Studies in Translation offered by UT have been developed since 2001. However, with the development of translation as a new discipline and the advancement of technology in the distance education sector as part of instructional design, it is therefore necessary to design and develop online or web-based supplementary learning materials for the core courses that can be freely accessed by the students; this is again one of the characteristics of open and distance education.

Some aspects of the translation learning content have not actually been fully developed in the coursebooks are as follows: (a) texts analysis in translation; (b) theoretical aspects of translation (i.e. translation strategies/techniques) that can assist the students to overcome translation problems (Newmark 1988, Munday 2001); and (c) the utilization of web-based technology for distance education purposes. In other words, this web-oriented research again has two related advantages: (1) to support the *OER movement*, a global and collective effort to provide teaching,

learning and research materials that can be accessed for free by the users ('Guidelines for Open Educational Resources (OER) in Higher Education', 2011: v); (2) to improve the quality of UT'S learning materials, particularly enrichment of the existing printed learning materials.

Research Questions

Within the context of text analysis in translation, the application of translation strategies and the development and full implementation of the translation courses WBI prototype, some research questions can be formulated as follows: (1) how to collect data on research and information for the purpose of instructional needs analysis before the WBI prototype development commences? (2) how to plan a formative evaluation? (3) how to conduct a concurrent design (i.e. design, development, formative evaluation, initial implementation)? (4) how to conduct a full implmentation of the WBI prototype?

Literature Review

Delivery systems within the context of distance education normally refer to at least five components: (1) Correspondence Courses which includes print and non-print (multimedia-oriented) learning materials, online bulletins and email; (2) Broadcast Systems (e.g. radio, television); (3) Teleconference System Communication Networks (e.g. the use of the telephone, vicon and teleconference); (4) Computer Digital Technologies; (5) the Internet and the World Wide Web. Those are the major types of delivery modes that have been used in distance education systems since the early 1990s (Davidson-Shivers Rasmussen, 2006:12-14).

Learning Resources

Identifying the learning resources within the context of ODL, especially the design of learning materials used in translator training programs, should have been conducted before designing translation learning activities (Kelly, 2005:80). In addition, apart from traditional classes such as face-to-face tutorials and self-study, the use of ODL technology has created the so-called *web-based learning* in part (Hall, 1997; Khan, 2001; Andrew, 2003).

Bigg (2003), as cited in Kelly (2005:85), suggested that educational technology is an effort to remind the tutors that it should dedicated to improve the quality of learning, not simply to give more information. In the context of the training program for translators, according to Kelly, the new technology is not only useful for teaching and learning purposes but also to help students apply it to translation activities. She added that the distance or off-campus teaching and learning is one of the real applications of educational technology.

To support the theoretical background above, a couple of research on the translation pedagogy based on the Web need to be addressed here. For example, Micu and Sinu (2012) did a research on the benefits of using a web-based program to teach specialized translation in Economics and law. Their study is focused on translation as a process and as a product whose quality can be assessed.

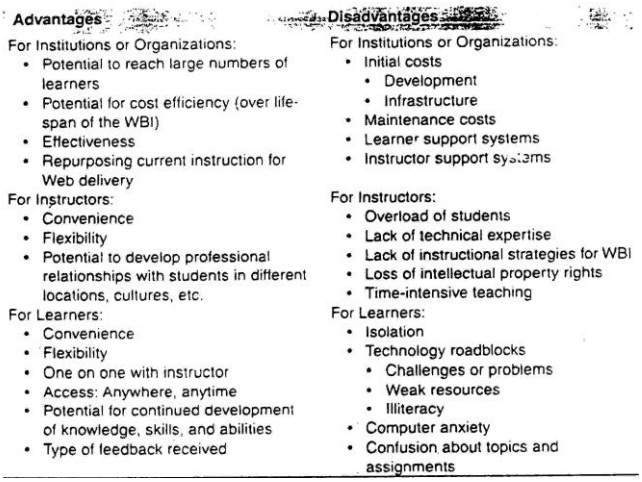
Duan (2011) also conducted a research on teaching English-Chinese translation on the basis of the Web. One of their findings is that the teaching translation via the web can improve the student's ability to translate texts from English into Chinese, and vice versa, including access to learning content and the teaching process.

Web-Based Learning

Web-based learning is an application of e-learning having some characteristics (Rusman, *et al*, 2012:264). The first feature is *interactivity* having to do with the provision of reliable communication channels that allow the process of learning to be either *synchronous* or *asynchronous*. The second feature is *independency* relating to flexibilities of learning associated with time, place, tutors and learning materials; it is therefore *learner-centred approach*. The third feature is *accessibility* which means easier accessibility, even wider access to the learning sources provided in the Internet, as opposed to conventional learning. The fourth features is *enrichment* associating with enrichment of course materials, training materials and learning activities making full use of information technology devices.

As regards Web-Based Learning, *Web-Based Instruction* (WBI) is one type of instruction (i.e. teaching-learning process) conducted online, as defined by Davidson-Shivers & Rasmussen (2006:24) that "web-based instruction (WBI) is a form of distance education whereby the instruction is delivered entirely online". In other words, the focus of this definition is on the mode through which teaching and learning materials are delivered.

It is therefore necessary to make a distinction between the term *e-learning* and *Web-Based Instruction* (WBI). *E-learning*, on the one hand, refers to the use of electronic application and process for the purpose of giving instructions, including *computer-based training*/CBT), WBI CD. On the other hand, WBI is a kind of instructions given via the Internet (Davidson-Shivers & Rasmussen, 2006:9-10). The Internet has the orientation towards delivering printed learning materials; whereas the Web has the ability to distribute learning materials in the form of graphics. With the help of *search engines*, *portal* and *browser*, the Web makes things much easier for the users to search for information, to communicate with each other and also to operate the software. However, according to the ODL stakeholders (i.e. institutions, tutors and students), WBI has some advantages and also disadvantages, as seen in Figure 1.



Advantages	Disadvantages

For Institutions or Organizations:
• Potential to reach large numbers of learners
• Potential for cost efficiency (over life-span of the WBI)
• Effectiveness
• Repurposing current instruction for Web delivery
	For Institutions or Organizations:
	• Initial costs
	  • Development
	  • Infrastructure
	• Maintenance costs
	• Learner support systems
	• Instructor support systems

For Instructors: • Convenience • Flexibility • Potential to develop professional relationships with students in different locations, cultures, etc.	For Instructors: • Overload of students • Lack of technical expertise • Lack of instructional strategies for WBI • Loss of intellectual property rights • Time-intensive teaching

For Learners:
• Convenience
• Flexibility
• One on one with instructor
• Access: Anywhere, anytime
• Potential for continued development of knowledge, skills, and abilities
• Type of feedback received
	For Learners:
	• Isolation
	• Technology roadblocks
	  • Challenges or problems
	  • Weak resources
	  • Illiteracy
	• Computer anxiety
	• Confusion about topics and assignments

Figure 1. Advantages & Disadvantages of WBI

UT-Online is one of the learning facilities provided by UT for the students to get wider access to learning sources and also to deeper their understanding about the learning content. Online tutorial learning materials and online or web-based supplementary learning materials are

considered as parts of open learning resources provided by UT, called *UT-OER*. As part of the *learning environment*, more specifically within the context of translation-oriented-*learning community*, the three elements (i.e. tutors, students and supporting instructional team) are interrelated, as seen in Figure 2.

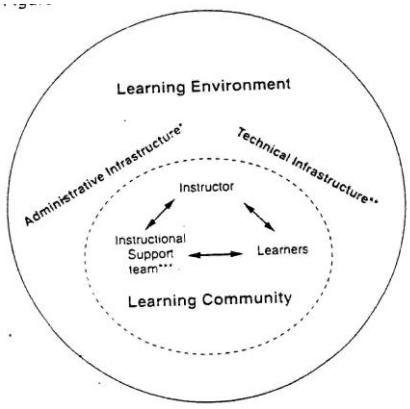


Figure 2. Web-Based Learning Environment and Community

Learning Theories

The development and implementation of the prototype of translation courses supplementary learning materials as one type of WBI is based on three major learning theories − *behaviorism*, *cognitivism* and *constructivism* (Davidson-Shivers & Rasmussen, 2006:40). The three learning theories are very relevant to the development of the prototype involving translating texts as a skill (*behaviorism*: *practice*, *enforcement*, *active learning*), translator's general knowledge and translation theory (*cognitivism*: *learner-centered*, *meaningfulness*, *prior knowledge* and *active learning*); this background is extremely useful for the translator in professional translation practice; the essence of this cross-cultural communication activity is how meanings in the source text and in the target text, as well as empirical knowledge across cultures are integrated into one (*constructivism*: *learning social contexts*). To put it simply, translating texts from the source language into the target language requires high level of bilingualism, wider general knowledge associated with various disciplines and cross-cultural understanding is basically an application of the three learning theories (*integrated approach*), as seen in Figure 3.

However, the three theories of learning in their era did not fully consider aspects of technology in the learning process, including how it takes place in the context of organization, especially in today's digital era. The presence of connectivism as a paradigm considers how the learning process takes place outside one's self, that is, how learning activities can be stored and "manipulated" by employing learning technologies and connectivity (Siemens 2005).

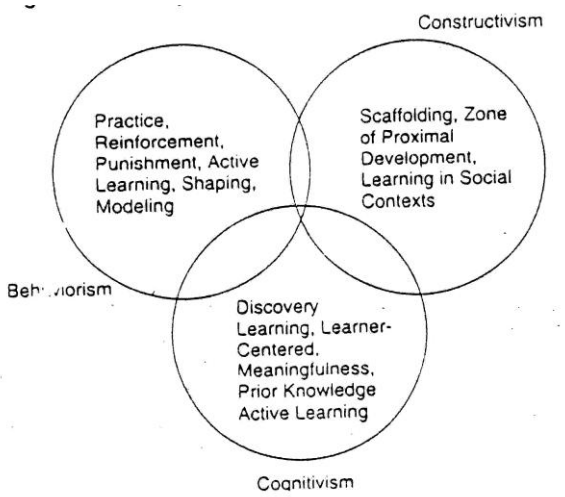


Figure 3. Integrated, Multitheoretical Approach to Learning

According to Siemens (2005), one of the principles of the connectivism paradigm is that of the "*ability to see connections between fields, ideas, and concepts is a core skill* ". Teaching and learning translation activities also involves learning technologies through web-based learning which becomes the focus of this research, as well as the connectivity between different fields of sciences which is reflected in the source text containing many ideas and concepts of the scientific theory. Thus, conectivism becomes very relevant in this study because of the implications of how the learning environment is designed in such a way that aligned with the learning activities in the digital age.

Web-Based Instructional Design (WBID) Model

At the macro level, the relationship between the learning theories and other relevant theories (e.g. distance education theories, instructional design theories, communication theories, and systems theory) is illustrated in Figure 4 − a model of web-based instructional design (Davidson-Shivers & Rasmussen 2006:39).

The theory of communication has also been adopted in both translation theories and translation studies in the sense that translation is basically an act of communication across languages and cultures, as defined by Hatim and Mason (1997:1) that "translating is an act of communication which attempts to relay, across cultural and linguistic boundaries, another act of communication (which may have been intended for different purposes and different readers/hearers)". Based on the definition, written communication through translation can be illustrated as follows: the source text writer as the sender (S_1) → the translator as the source text reader (R_1) → the translator as the target text writer as the second sender (S_2) → the target readers as the second reader (R_2).

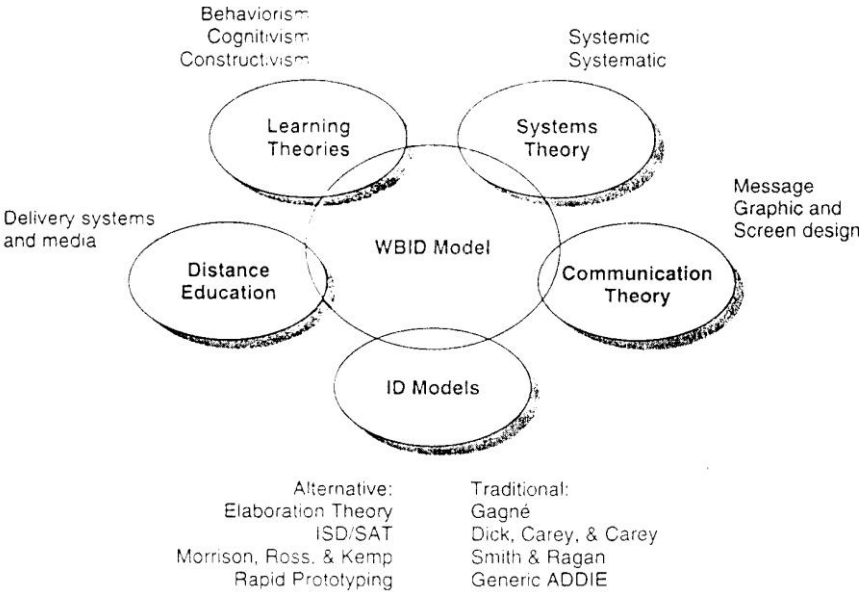


Figure 4. Foundational Areas of the WIBD Model

WBID Model (see Figure 5) covers several stages of development ranging from analysis (e.g. instructional problems and components), design and development, implementation and evaluation (Davidson-Shivers & Rasmussen 2006:57-62). Evaluation in this case becomes part of WBID while formative evaluation comes after full implementation.

The analysis stage aims to identify the gap between expected performance and real performance. Based on this analysis, appropriate solutions to the problems are then suggested. In addition to this, analysis of instructional components is intended to determine four aspects: (1) instructional objectives, that is, competencies that will be achieved after learning the web-based supplementary learning materials; (2) context (i.e. the environment where the prototype is designed and offered); (3) users (i.e. interest, needs, abilities, knowledge, skills and experience); (4) content, relating to where to start and entry skills for the program.

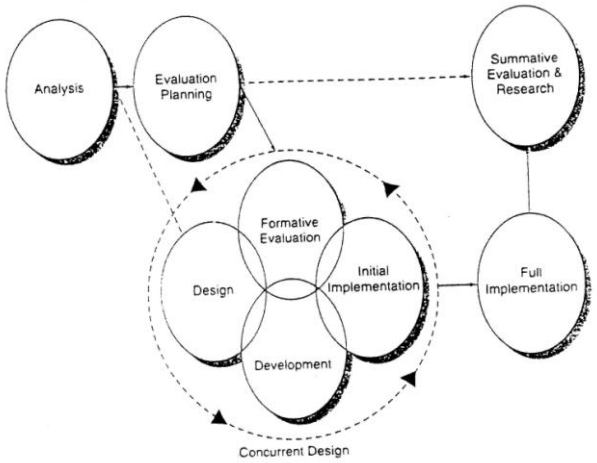


Figure 5. Concurrent Design

The second stage of development of web-based learning materials is making a plan for both formative and summative evaluations (note that the real ones will be conducted after full implementation). The plan for formative evaluation is meant to determine stakeholders, what to evaluate, evaluators and reviewers for evaluating accuracy, completeness, clarity, instructional soundness, appeal), what methods to use, time and how the evaluation will be carried out, decision to make when the prototype is developed. The last stage of planning evaluation is doing a field trial involving the students as the end-users. The second stage of evaluation planning is developing a preliminary plan for summative evaluation.

The third stage of developing WBID (after analysis and formative evaluation planning stages is *concurrent design*. This is a stage of development for the prototype of the translation courses supplementary learning materials that deals with: (1) design process which includes identification of the objectives and assessment as well as tasks; (2) development and evaluation.

The fourth WBID development is implementation, the stage where the prototype is ready for use. It has two main stages: (1) *initial implementation* which is part of *concurrent design* intended for a preliminary field trial involving several users in a certain setting; (2) *full implementation* associated with facilities and management aspects; this is conducted after necessary revisions and involves a much larger number of users.

The fifth stage of development of WBID is *summative evaluation* mainly intended to provide recommendations whether the web-based program is still needed and effective or not (Dick & Carey & Carey 2005:338-61). To give guidance and to achieve its target and also to give a clear picture of the whole stages of the prototype research and development, a research roadmap (see Figure 6) on the basis of R & D model (Borg & Gall 1983:772) is provided below.

Methodology

In terms of categories, this research belongs to *Research and Development* (R & D), as put forwarded by Borg & Gall (1983). It is a process of developing a new product partly taking the form of supplementary learning materials that can enrich the existing translation courses learning materials and that can also be scientifically proven. In order to achieve the objectives of the study, this research adopts mixed methods, that is, qualitative and quantitative (Creswell 2003, Silverman & Marvasti 2008). Figure 3 shows a *Fishbone Diagram* illustrating the research stages for the first and second year which is based on both web-based learning (Davidson-Shivers & Rasmussen 2006) and the R & D model (Borg & Gall 1983).

For the purpose of researching and developing the prototype of translation courses supplementary learning materials, a data collection method includes: (1) doing instructional *needs analysis*; (2) *planning* a formative evaluation; (3) doing a *concurrent design* which consists of *designing* and *developing* the prototype, conducting a *formative evaluation*, including carrying out *initial implementation*; (4) *full implementation* (Davidson-Shivers & Rasmussen 2006). To obtain both the quantitative and qualitative data, several techniques are used (i.e. in-depth interviews, observation, surveys along with their relevant research instruments (e.g. written and/or online questionnaires).

Results & Discussion

As far research and innovation in translation learning resources in concerned, a computer programme has been developed. It aims to enrich the existing printed translation learning materials at UT. Below is a prototype having four sections: *Introduction*, *Source Text Analysis and Translation Strategies*, *Formative Tests*, and *References*.

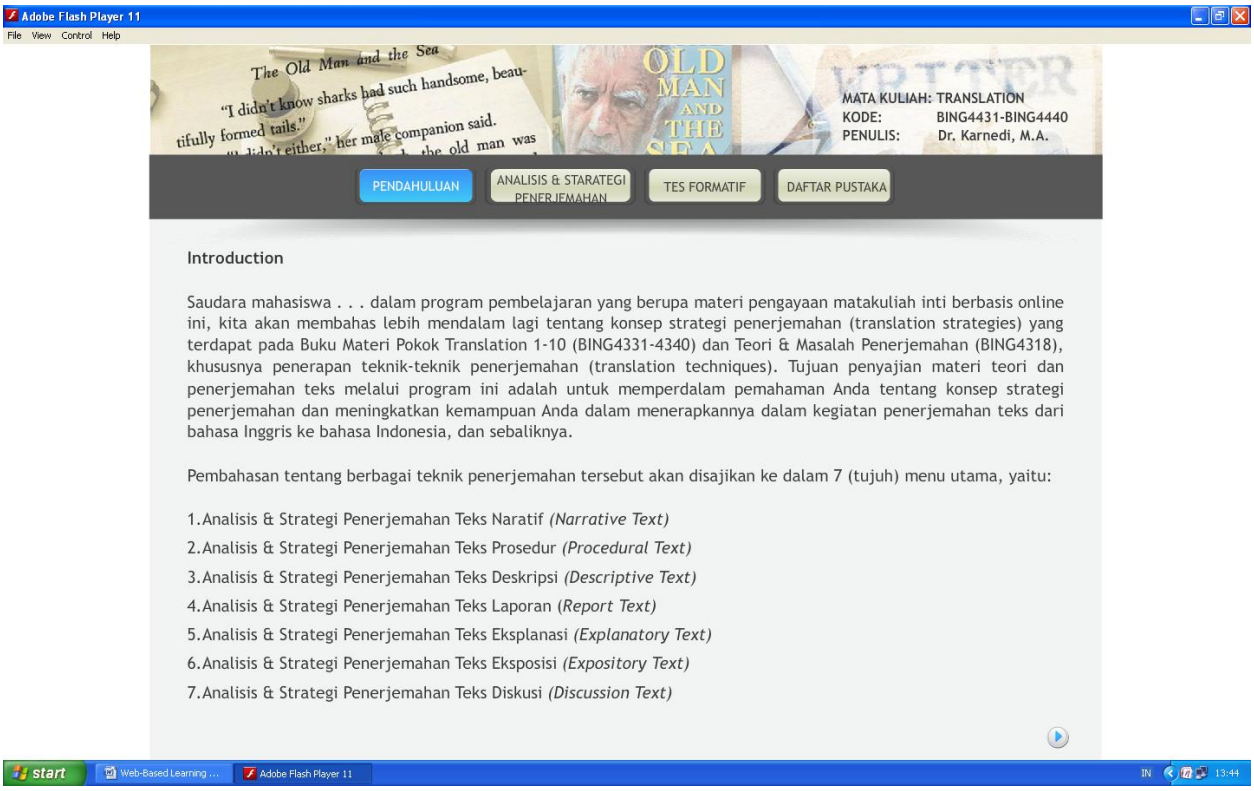


Figure 6. Prototype — Introduction Section

In the Introduction Section as seen in Figure 6, the translation students as users are introduced to the background of the programme associated with online translation learning, translation practice, and translation strategies as theories, text types, as well as its relations with other core translation courses in the undergraduate programme of study in translation at UT.

In the Source Text Analysis and Translation Strategies Section (Figure 7), the users are exposed to some key aspects in translation, such source text analysis, text types, translation process; whereas in the Referential Level Section (Figure 8 & 9), context for translating a text type is provided for the users before they pursue to the next Sections (Figure 10—15) dealing with the source text analysis and the application of translation strategies.

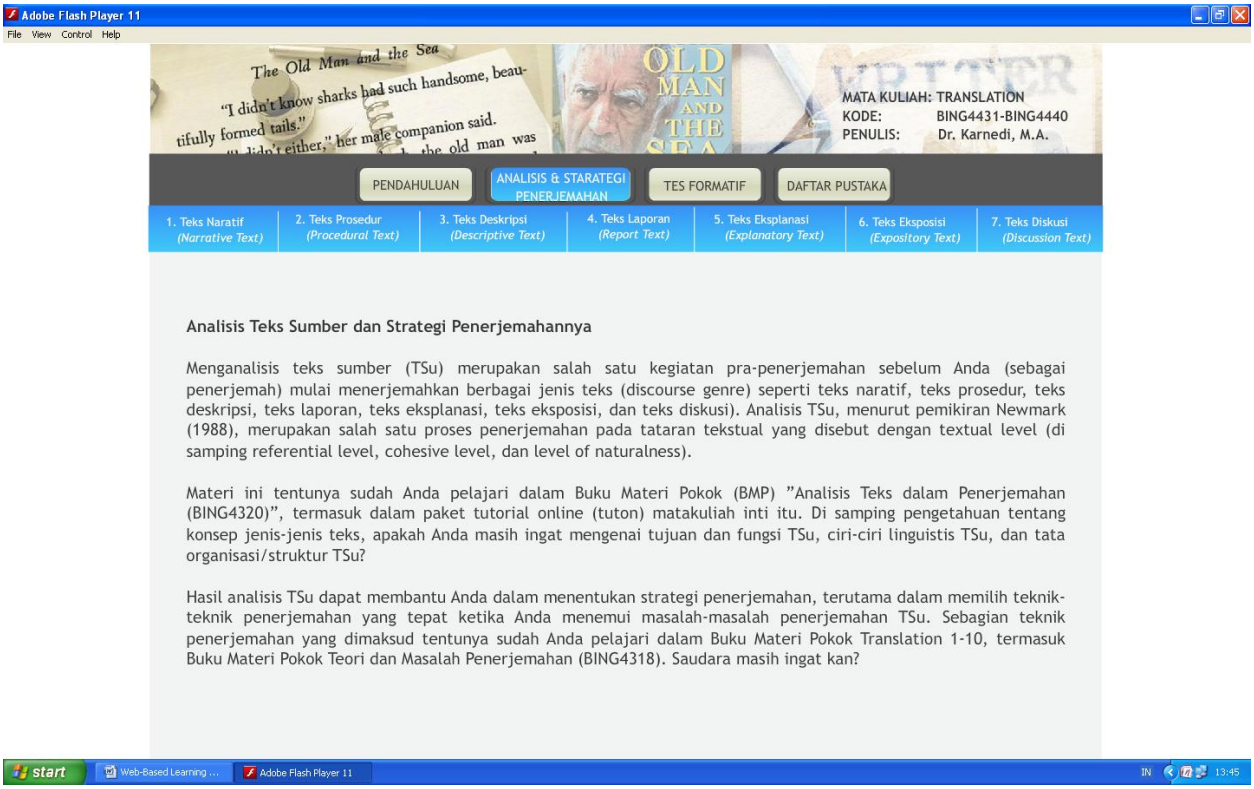


Figure 7. Source Text Analysis & Translation Strategies Section

Figure 8. Translation Process — Referential Level (1)

Figure 9. Translation Process — Referential Level (2)

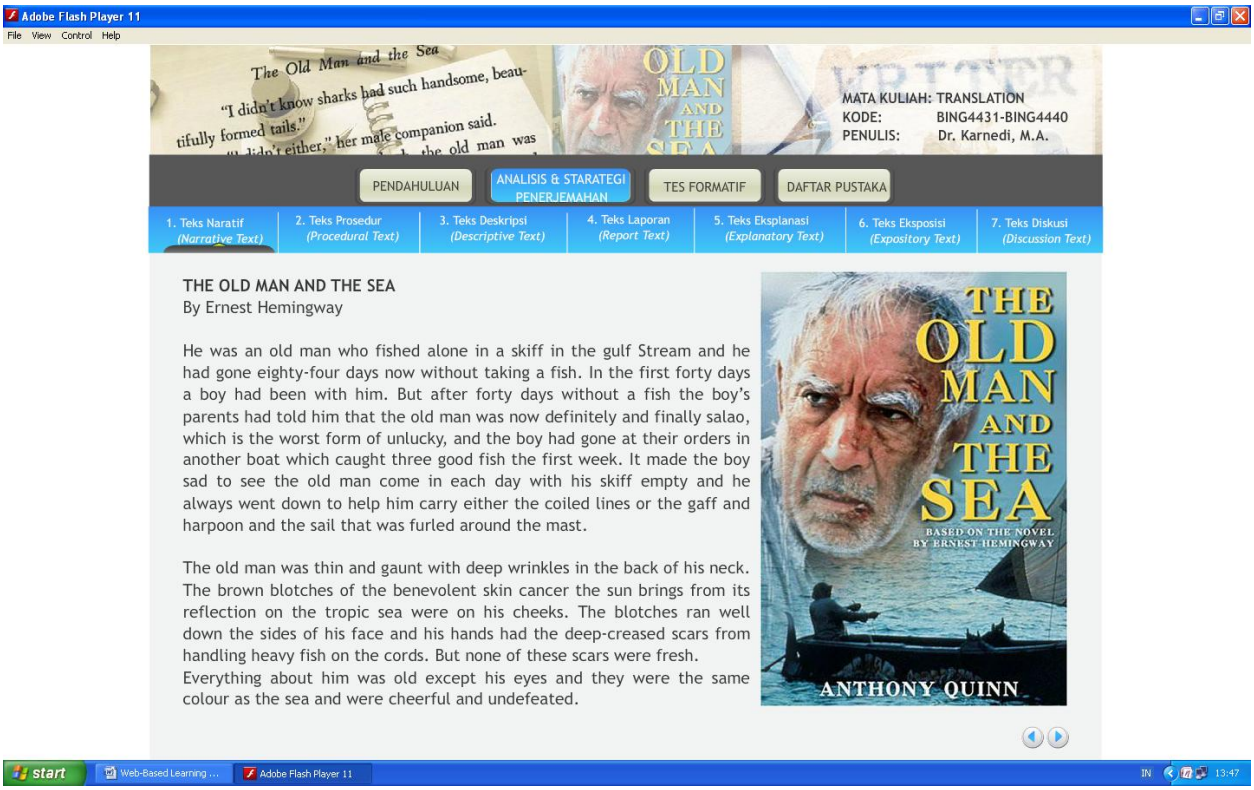
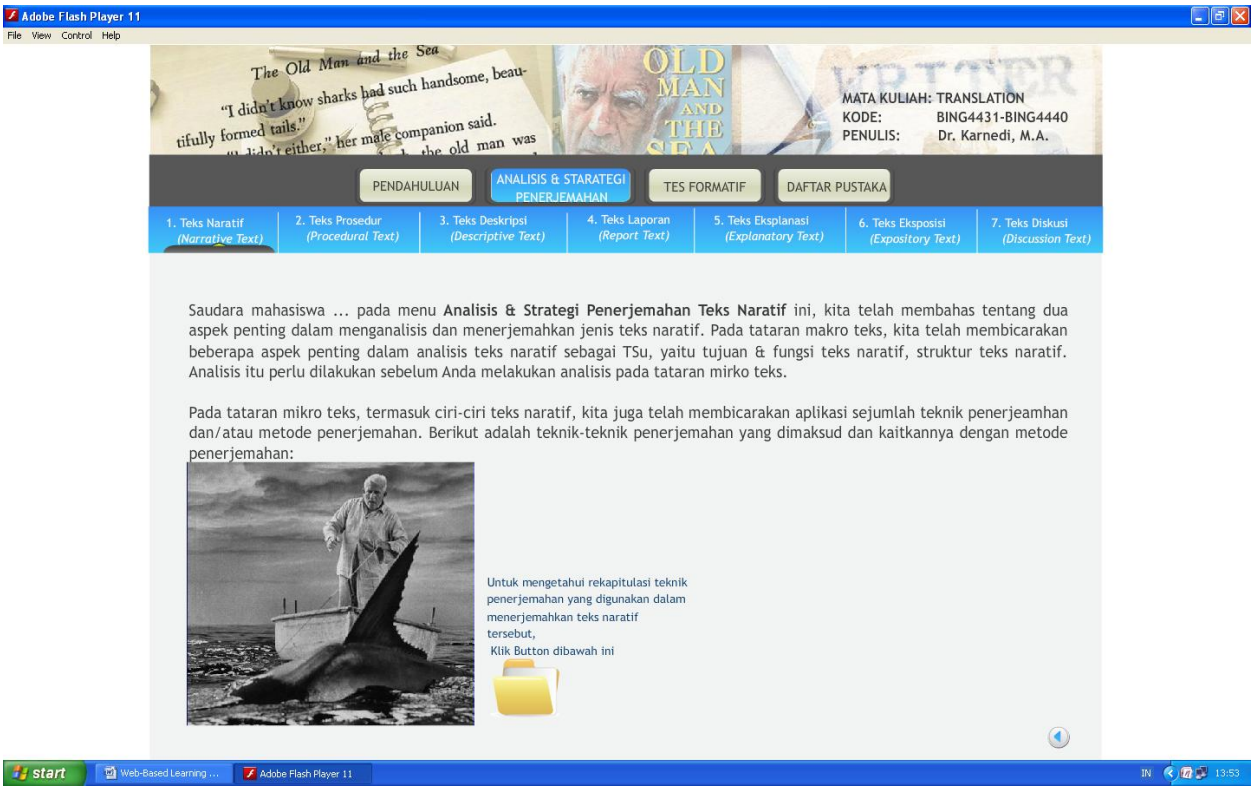


Figure 10. Source Text

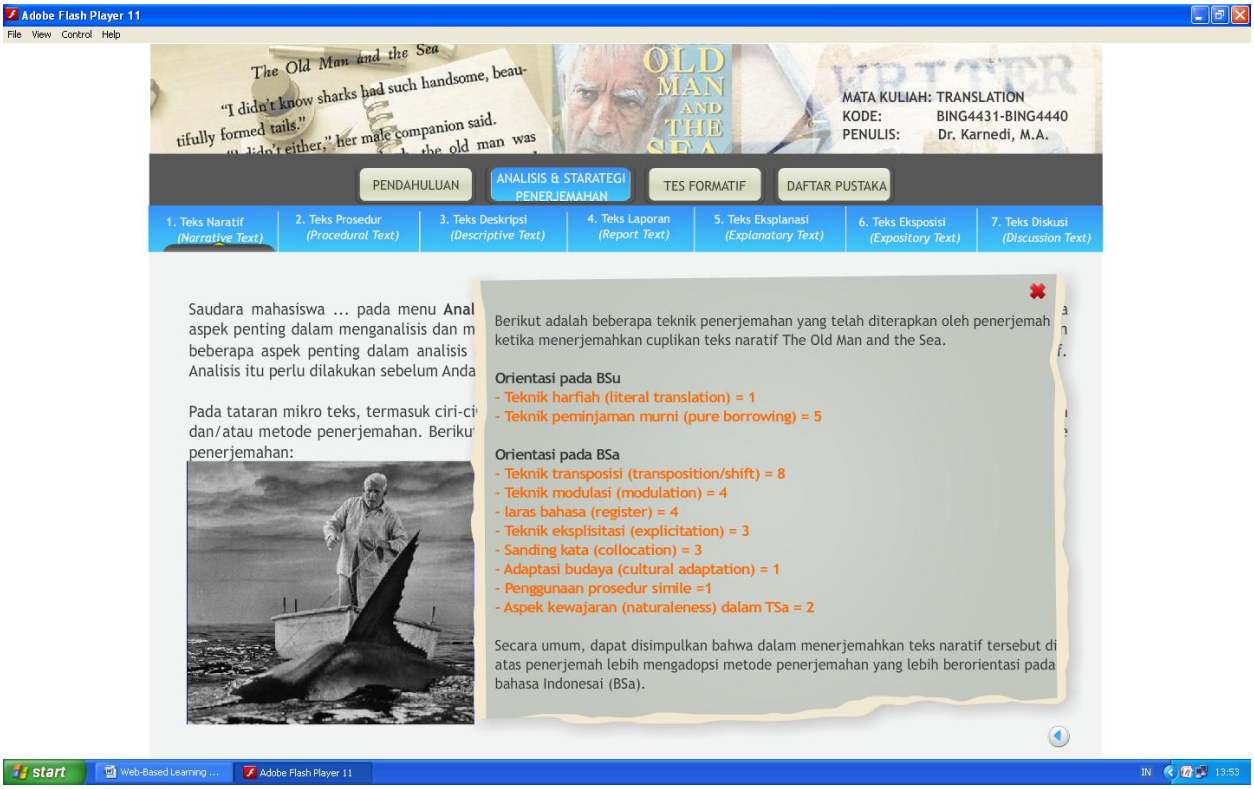
Figure 11. Aspects of Source Text Analysis

Figure 12. Comparative Analysis — Source Text vs Target Text

13. Translation Strategies — Translation Techniques



14. Translation Techniques (1)



15. Translation Techniques (2)

Students' Perception

This section deals with the students' responses after running the program and learning something from it. Discussion in this part covers relevant areas of WBL, such as clarity of instructions provided in the programme, its impact on learners, feasibility, and other related perceptions.

Conclusion

The research findings reveals that traditional translation learning resources should not always be in the form of printed learning materials. Research and innovation associated with translation learning resources based on the Web (i.e. WBL) can actually be made by making use of ICT-based learning resources. By doing so, new ODL learning invironments can be created for the students' full benefits.

References

Andrew, M. (2003). *Should we be using web-based learning to supplement face-to-face teaching of undergraduates?* Available at: cblis.uniza.sk/cblis-cd-old/2003/3.PartB/Papers/ICT.../Andrew.pdf, accessed 11 February 2013.

Atkins, D.E., Brown, J.S., & Hammond, A.L. (2007). *A review of the open educational resources (OER) movement: Achievements, challenges, and new opportunities*. Available at: http://www.hewlett.org/uploads/files/ReviewoftheOERMovement.pdf, accessed 11 February 2013.

Borg, W. R., & Gall, M.D. (1983). *Educational Research: An Introduction (4ed).* London: Longman.

Creswell, J.W. (2003/2010). *Research Design: Qualitative, Quantitative, and Mixed Methods approaches* (*2nd ed*). London: Sage Publications.

Davidson-Shivers, G.V., Rasmussen, K.L. (2006). *Web-Based Learning* : *Design, Implementation, and Evaluation*. New Jersey: Pearson Merrill Prentice Hall.

Dick, W., Carey, L.,Carey, J.O. (2005). *The Systematic Design of Instruction* (sixth edition). Boston: Pearson.

Duan, Z. (2011). Task-based teaching of English-Chinese translation under "caliber-oriented education to success" based on Web. *Advanced Research on Electronic Commerce, Web Application, and Communication, Communications in Computer and Information Science, Volume 143*, p. 377. Available at: *adsabs.harvard.edu/abs/2011arec.conf..377D*, accessed 16 February 2013.

Dupin-Bryant, Pamela A. & DuCharme-Hansen, B.A. (2005). Assessing Student Needs in Web-Based Distance Education, *International Journal of Instructional Technology and Distance Learning* 2(1).

Hall, B. (1997). *Web-based Training Cookbook.* John Wiley & Sons.

Hatim, B., & Mason, I. (1997). *The Translator as Communicator*. London: Routledge.

Kelly, D. (2005). *Handbook for Translator Trainers.* Manchester: St. Jerome Publishing.

Khan, B. H. (2001). *Web-based Training.* Educational Technology Publications.

Micu, C. S., Sinu. R. Web-based methods and tools in teaching translation and interpreting. *The 7th International Conference on Virtual Learning ICVL* 2012. Available at: www.icvl.eu/2012/.../ICVL_ModelsAndMethodologies_paper11.pdf, accessed 16 February 2013.

Munday, J. (2001). *Introducing Translation Studies*. New York: Routledge.

Newmark, P. (1988). *A Textbook of Translation*. Hertfordshire: Prentice Hall.

Nord, C. (1991). *Text Analysis In Translation: Theory, Methodology, and Didactic Application of a Model for Translation-oriented Text Analysis*. Amsterdam: Rodopi.

Nord, C. (1997). *Translation as a purposeful activity*. Manchester: St. Jerome.

Oppenheim, A.N. (1992). *Questionnaire Design, Interviewing and Attitude Measurement*. London: Pinter Publishers.

Siemens, George (2005). Connectivism: A learning theory for the digital age, *International Journal of Instructional Technology and Distance Learning*, 2(1).

Silverman, D. & Marvasti, A. (2008). *Doing Qualitative Research: A Comprehensve Guide*. California: Sage Publications.

Storey, M.A., Maczewski, M., Wang, M. (2002). Evaluating the usability of Web-based learning tools. *Educational Technology & Society* 5(3). Available at: www.icvl.eu/2012/.../ICVL_ModelsAndMethodologies_paper11.pdf, accessed 11 July 2013.

Tsai, S. & Machado, P. *E-learning, online learning, web-based learning, or distance learning*: *Unveiling the ambiguity in current terminology*. Available at: cblis.uniza.sk/cblis-cd-old/2003/3.PartB/Papers/ICT.../Andrew.pdf, accessed 11 February 2013.

UNESCO & COL. (2011). *Guidelines for Open Educational Resources* (*OER*) *in Higher Education*. France & Canada: UNESCO & COL.